Prop 19: Potential Implications For the United States and Mexico

by

Rosalie Liccardo Pacula, Ph.D.
Senior Economist and Co-Director
RAND Drug Policy Research Center

USD Trans-Border Institute Conference, October 2010
Two Recent RAND Studies Offer Insights from Complex Simulation Analyses


2. How Might Marijuana Legalization in California Affect Drug Trafficking Revenues and Violence in Mexico? - released October 12, 2010

• Both available for download: www.rand.org/multi/dprc
Project Team Working on These has a Great Deal of Drug Policy Expertise

- Dr. Beau Kilmer, RAND Drug Policy Research Center
- Dr. Jonathan Caulkins, Carnegie Mellon University
- Dr. Peter Reuter, University of Maryland

Co-authors on “Altered State” Only:

- Dr. Rosalie Liccardo Pacula, RAND & NBER
- Dr. Robert MacCoun, UC Berkeley
“Altered State?” addresses two issues central to CA debate

- Effects legalization would have on marijuana consumption in CA
- Effects legalization would have on public budgets in CA

But also has implications for impact on rest of US and Mexico:

- Demonstrates that tax evasion could be a major issue (maintains profit motive for illegal supply - possibly from Mexico, affecting revenue of DTOs)
- Demonstrates uncertainty in CA becoming supplier to the rest of the US (Impacts supply and price of MJ to the rest of the US)

Approach: Build model to examine effects of the proposition on consumption and revenues, highlighting uncertainty
How did we build the model?
A “Logic Model” Links Policy Decisions to Ultimate Outcomes of Interest

Decisions on Tax Rate & Regulatory Regime

Net Impact on State and Local Budgets

Remove Penalties for Sales & Possession

MJ Consumption (quantity/patterns of use)
Policy Decisions Have Direct and Indirect Effects

Decisions on Tax Rate & Regulatory Regime

Tax Evasion & Tax-Induced Shift In Mix of MJ Types

Net Impact on State and Local Budgets

Changes in Production and Distribution Costs

MJ Prices Faced by Consumers

Factors That Influence Budgets Besides Legal Sales (e.g., CJ and treatment costs, Fed spending, tourism)

Price Sensitivity of Consumers

MJ Consumption (quantity/patterns of use)

Non-price Effects on Consumption

Remove Penalties for Sales & Possession

Tax Revenues from Legal MJ Sales
Two major concerns for US and Mexico

• (1) Tax evasion in CA
Tax Evasion: A Major Concern
What happens when you impose a $50/ounce excise tax?

Figure 3.2
Components of the Taxed, Legal Price Under Base-Case Assumptions

- Producer tax, 0.0%
- Retailers’ margin, 10.3%
- Distribution cost, 2.7%
- Producers’ profit, 5.7%
- Processing cost, 2.1%
- Labor cost, 2.7%
- Production rent, 5.8%
- Lighting, 5.1%
- Production materials, 6.9%
- Excise tax, 54.9%

SOURCE: Caulkins (2010b).
NOTE: Assumes a $50-per-ounce excise tax.
1. **Tax Evasion Could Be a Major Concern**

- **Ammiano Bill:** Benefit of not paying taxes on a pound of MJ = $800-$850
  - Incentive for black market to exist
  - Mexico could provide MJ in black market, but only competitive if it produces a more potent product at lower cost
  - Mexico MJ is generally lower potency (commercial grade, THC ~ 5-7%; CA sinsemilla around 12-15% THC)
  - Post–legalization, THC adjusted price in CA will be less than Mexican MJ (< $40 per ounce; commercial grade Mexican marijuana > $60 per ounce today)
1. **Tax Evasion Could Be a Major Concern**

- Proposition 19: allows local jurisdictions to create their own tax rate
  - There is a possibility of a “race to the bottom” as jurisdictions inside CA lower taxes to stay competitive (prisoner’s dilemma)
  - Key challenge for policymakers if Prop 19 passes is how to prevent this from happening
Two major concerns for US and Mexico

• (1) Tax evasion in CA

• (2) CA supply MJ to the rest of the US
Second RAND Report: Impact of CA Legalization on Mexican DTO Revenues

• Purpose: If CA supplies the rest of the US it will hurt revenues of Mexican DTOs, but by how much?

• Need to start with an estimate of Mexican DTO drug revenues

  – Estimate size of total Mexican DTO revenues from marijuana is estimated to be: $1.1 - $2.0 billion dollars (Median $1.5 billion)

  – Estimate of total Mexican DTO revenues from all drugs is $5.9 to $7.6 Billion

  – Marijuana shipped to US represents about 20% of DTO drug revenue, not 60%
What Impact Would Legalizing MJ in CA Have on Mexican DTOs?

• If CA legalization only eliminated demand for Mex marijuana in CA, that would reduce gross drug export revenues by 2% - 4%
  – Unlikely to impact drug-related violence in Mexico

• If CA legalization completely eliminated demand for Mex marijuana in the US, microsimulation model shows gross drug export revenues among Mexican DTOs would fall by 13% - 23%
  – Might impact violence, but could be differential effects in short term and long term
  – Also depends on the DTO’s flexibility to moving into alternative products (higher potency MJ, prescription drugs)
Main Conclusions We Draw From Reports

- Decisionmakers should be skeptical of estimates that claim precision
  - There is substantial uncertainty around all model parameters and key decision makers (federal government response; Mexican DTO response)

- Consumption will increase in CA and possibly in other parts of the US with legalization, but it is unclear how much

- Evidence base for analysis of impact on consumption and revenue in the US is severely limited
  - California proposals go well beyond other marijuana policy changes, which tend to be incremental

- Evidence base for analysis of impact on Mexico of CA legalization is also severely limited due imprecise data on actual amounts of drugs supplied to US
Key Insights from the RAND Reports

1. Pre-tax retail price of Marijuana will likely drop by more than 80 percent

2. Consumption will increase, but it is unclear by how much

3. Tax evasion could be a major concern if large tax is imposed

4. Criminal justice savings of legalization in CA is in the millions, not billions

5. Prop19 will not dramatically reduce Mexican cartel revenues. Overall effect will depend on whether California sinsemilla dominates U.S. market

6. Unclear how a 13-23% reduction in DTO revenues will influence overall violence
Criminal Justice Expenditures Are Probably Less Than $300 Million

- Miron estimates are high for a few reasons
  - Police do more than arrest and not all arrests are equally expensive
  - MJ offenders less likely to be prosecuted/receive shorter sentences than other drug offenders
- Unclear whether “savings” would be refunded to taxpayer

### Annual Estimates of Enforcing Marijuana Prohibition in California ($ millions)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Policing</td>
<td>12</td>
<td>413</td>
<td>59–74</td>
</tr>
<tr>
<td>Adjudication</td>
<td>85</td>
<td>819</td>
<td>43–52</td>
</tr>
<tr>
<td>Corrections</td>
<td>103</td>
<td>660</td>
<td>88–141</td>
</tr>
<tr>
<td>Total</td>
<td>204*</td>
<td>1,867</td>
<td>190–267</td>
</tr>
</tbody>
</table>

*Includes $4 million for California Marijuana Suppression Program.
Assumptions About the Demand Curve and Tax Evasion Influence Consumption Projections

Percent Increase in Marijuana Consumption

Constant Elasticity Curve

Linear Curve

Percent of Consumption That Evades Sales/Excise Taxes
Marijuana Legalization and Health

• Dependence would increase
  – Don’t know much about how dependence varies with number of current users
  – Assuming relationship is proportional and we see a 58% increase in consumption, rise in number of dependent users 305,000 (range 144,000 – 380,000 under other plausible assumptions).
  – Treatment episodes still likely to rise by 10-29%
**Rise in MJ treatment associated with legalization and rise in number of dependent users**

Table 3: Plausible Rough Estimates of Legalization’s Effect on Marijuana Treatment

<table>
<thead>
<tr>
<th>Category</th>
<th>Today</th>
<th>After Legalization with Dependence Increasing by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>21 and older CJ referrals</td>
<td>9,164</td>
<td>0</td>
</tr>
<tr>
<td>21+ other referrals</td>
<td>5,305</td>
<td>7,958</td>
</tr>
<tr>
<td>&lt;21 CJ referrals</td>
<td>7,749</td>
<td>11,624</td>
</tr>
<tr>
<td>&lt;21 other referrals</td>
<td>12,343</td>
<td>18,515</td>
</tr>
<tr>
<td>Total</td>
<td>34,561</td>
<td>38,098</td>
</tr>
<tr>
<td>Increase in Treatment</td>
<td></td>
<td>3,537</td>
</tr>
<tr>
<td>% Increase</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29%</td>
</tr>
</tbody>
</table>
Marijuana Legalization and Health

- Dependence would increase
  - Don’t know much about how dependence varies with number of current users
  - Assuming relationship is proportional and we see a 58% increase in consumption, rise in number of dependent users 305,000 (range 144,000 – 380,000 under other plausible assumptions).
  - Treatment episodes still likely to rise by 10-29%
  - Rise in cost of treatment small ($2 - $5.6 million) relative to CJ savings and presumed revenue gain
Marijuana Legalization and Health

- **Drugged driving**
  - Very clear: Marijuana & alcohol is a bad combination
  - Evidence less clear for marijuana-only
    - Hard to establish causality
    - “A convergence of fallible evidence this suggests that cannabis use increases the risk of motor vehicle crashes 2-3 times” (Room et al., 2010 citing Ramaekers et al., 2004)
    - Even if it is true, it is much smaller than the risk for alcohol
Marijuana and Traffic Accidents

Chart 1. All CA Drivers in Fatal Passenger Vehicle Crashes with Known Alcohol & Marijuana Use, 1998-2008, FARS Data

- MJ All FCs not 08+
- MJ All FCs
- BAC 08+ All Drivers

Percent Use

- 0.0%
- 2.0%
- 4.0%
- 6.0%
- 8.0%
- 10.0%
- 12.0%
- 14.0%
- 16.0%
- 18.0%
- 20.0%

Years

- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008

Usage Rates:
- 14.9% in 1998
- 15.3% in 1999
- 14.6% in 2000
- 15.6% in 2001
- 14.9% in 2002
- 14.8% in 2003
- 16.3% in 2004
- 16.3% in 2005
- 16.4% in 2006
- 16.7% in 2007
- 17.9% in 2008
Marijuana Legalization and Health

• Major health impacts could come from change in use of other substances
  – Don’t know how legalization will influence use of other drugs
  – Social costs much higher for alcohol and harder drugs
  – Marijuana and alcohol together increases risk of auto crashes

• Need to pay attention to the type of marijuana
Pieces of information feeding the model

1. Current (black market) price of marijuana
   - Needed to project price-induced changes in consumption
   - Current price of an ounce of sinsemilla: $250 - $400 per ounce.

2. Anticipated change in price (post legalization, pre-tax)
   - Function of: (1) cost of production (how you grow, where you grow, potency shooting for) and (2) anticipated regulation
   - Estimated legalized price < $40, over an 80% decline in price

3. Current level of consumption
   - Consistent with national prevalence levels, need to convert to quantities
   - Between 400 and 500 metric tons in CA each year

4. Responsiveness of demand
   - non-price effect: 35%
   - Price/income effect: THIS IS NOT A SMALL CHANGE IN PRICE!! Current literature describes effects of a small change only.